Their observations during the development of these chloroamide ointments for the Armed Forces suggested to the present authors that the same type of preparation might prove useful for protecting the skin against many peace-time irritants and allergens. In order to test this theory, in April 1944, 12 men highly hypersensitive to poison ivy were selected by quantitative skin tests performed on 113 Naval volunteers. The relative protective capacity of 2 different chloroamide-containing ointments, of a blank control vehicle and of a perborate-containing ointment were compared in controlled experiments on these 12 subjects. The standardized techniques of the ointment applications and of the measured exposures to crushed green poison ivy leaves and to the most concentrated poison ivy extracts obtainable will be described in the detailed report.

The results showed that the relatively non-irritating chloroamide-containing gas protective ointments of the type of the Army M-5 ointment and the Navy S-330 ointment offer significant degrees of protection against the poison ivy excitant (fig. 1).

Further studies with ointments of this type appear particularly promising, first, because some of the preparations have already proved themselves to be quite non-irritating and non-toxic even when used repeatedly on large skin areas under the most severe conditions of tropical warfare; and second, because the present studies indicate that the class of chloroamides used should be capable of rapidly detoxifying many different skin irritants and sensitizers which are susceptible to inactivation by oxidation and chlorination (e.g., certain dyes, dye intermediates, plant derivatives).

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PYRIBENZAMINE IN THE TREATMENT OF ITCHING SKIN CONDITIONS[1]

(A Preliminary Report)

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During the past few years a new group of so-called "anti-histaminic" agents has been developed and studied in Europe (1, 2) and in the United States (3, 4). Among the newer agents of this type are Benadryl (Parke, Davis and Co.) and Pyribenzamine (Ciba Pharmaceutical Co.).[2] The latter drug was introduced and has been extensively investigated in vitro and in the experimental animal by R. L. Mayer and collaborators (4). Pyribenzamine is said to possess the desirable properties of very high "anti-histaminic" activity combined with a relatively low toxicity.

Up to the present we have used Pyribenzamine in a group of 56 dermatologic cases. The group consisted of 17 cases of urticaria, 11 cases of atopic dermatitis, and 28 cases of pruritus associated with various dermatoses. The results obtained by us in these three categories are summarized in tables 1, 2 and 3.

In 13 of the 56 subjects one or more of the following side effects were observed:

	Subjects
Headache	5
Sleepiness	5

[1] Received for publication March 12, 1946.

[2] Pyribenzamine (N′-pyridyl-N′-benzyl-N-dimethyl-ethylenediamine monohydrochloride) is manufactured by the Ciba Pharmaceutical Co., Summit, N. J. who kindly supplied the material used in this study.

Nausea	4
Excitement, jitteryness, lightheadedness	3
Urinary frequency	2
Reduction of potency	1
Diplopia	1
Feeling of cold	1

Our patients received Pyribenzamine in doses of from 50 mg. to 300 mg. in each 24 hrs., over periods varying from a few days to several months. There was no evidence that the

TABLE 1

17 Cases of urticaria (incl. giant urticaria)

	ACUTE URTICARIA (OF LESS THAN 4 WEEKS' DURATION)	SUBACUTE URTICARIA (OF LESS THAN 3 MONTHS' DURATION)	CHRONIC URTICARIA (OF MORE THAN 3 MONTHS' DURATION)	TOTAL
Total no. of cases	5	2	10	17
Cases with good to excellent relief* from Pyribenzamine alone	2	—	5	7
Cases with fair relief* from Pyribenzamine alone	—	1	1	2
Cases with fair to excellent relief* from Pyribenzamine combined with other therapy	1	1	1	3
Cases with no relief*	2	—	1	3
Insufficient data for evaluation	—	—	2	2

* "Relief" refers to significant reduction of number of urticarial lesions, significant reduction of swelling and significant reduction of itching.

TABLE 2

11 Cases of atopic dermatitis

Total no. of cases	11
Cases with good to excellent relief* from Pyribenzamine alone	1*†
Cases with fair relief* from Pyribenzamine alone	0
Cases with fair to excellent relief* from Pyribenzamine combined with other therapy	5
Cases with no relief*	5
Insufficient data for evaluation	—

* "Relief" refers to significant improvement of eruption and lessening of itching.

† This patient obtained complete relief also from long standing asthma due primarily to exposure to dog dander.

incidence of undesirable effects increased with prolonged administration. On the contrary, the greater number of side effects occurred within the first few days of administration. In 2 cases we were obliged to discontinue the drug because of the undesirable side-effects. No drug eruptions and no visceral damage appeared in our cases. Pyribenzamine did not produce pathologic changes in the hematopoetic or urinary system as detectable by blood counts and urine examinations. These examinations were carried out on all our patients at weekly intervals. Despite these negative findings we believe that for the present all patients using this new class of drugs should be kept under close medical control with laboratory studies at regular intervals during the entire period of use.

COMMENT

Pyribenzamine appeared to be of therapeutic value in controlling the eruption and the itching in about one-half the cases of urticaria treated. It is noteworthy that 5 of 10 cases of long standing and ordinarily intractable urticaria experienced rapid and great benefits from the drug.

Pyribenzamine could not be shown to be of value in controlling the eruption and the itching in most cases of atopic dermatitis. However, in one case of the 11 treated, Pyribenzamine was of proven and significant benefit.

Pyribenzamine appeared to be of significant therapeutic value in some cases of "essential" pruritus and pruritus associated with various dermatoses.

TABLE 3

28 Cases of pruritus associated with miscellaneous dermatoses

	ECZEMATOUS DERMATITIS WITH URTICARIAL FEATURES	ECZEMATOUS DERMATITIS	ERYTHEMA MULTIFORME	CHRON. EXUDATIVE DISCOID AND LICHENOID DERMATOSIS	ACNE VULGARIS	PSORIASIS	LICHEN PLANUS	DERMATITIS HERPETIFORMIS	EXFOL. ERYTHRODERMA	LICHEN CHRON. SIMPLEX	PRURITUS VULVAE	PRURITUS SENILIS	PRURITUS (UNCLASSIFIED)	TOTALS
Total no. of cases.....	3	5	1	3	1	2	2	1	1	1	2	1	5	28
Cases with good to excellent relief* from Pyribenzamine alone.	2	1	—	—	—	—	—	—	—	1	2	—	2	8
Cases with fair relief* from Pyribenzamine alone.....	—	1	—	—	—	1	1	—	—	—	—	—	—	3
Cases with fair to excellent relief* from Pyribenzamine combined with other therapy.....	1	1	—	—	—	—	—	—	—	—	—	—	—	2
Cases with no relief*...	—	2	1	3	1	1	—	1	1	—	—	1	3	14
Insufficient data for evaluation.....	—	—	—	—	—	—	1	—	—	—	—	—	—	1

* "Relief" refers to significant reduction of itching.

No serious side-effects were observed. The minor discomforts which occurred did not in general interfere with the continued administration of Pyribenzamine. Despite these negative findings we believe that regular medical and laboratory examinations should be carried out on all patients using this new class of drugs over long periods.

In one case of chronic urticaria and in one case of chronic asthma associated with atopic dermatitis, there was evidence which suggested that in some cases the temporary administration of Pyribenzamine may lead to a relatively long-lasting cessation of symptoms and to a reduction of clinical sensitivity which persists for a significant time without further use of the drug.

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PYRIDOXINE IN THE TREATMENT OF ACNE VULGARIS

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In 1942 Joliffe, Rosenblum and Sawhill reported (N. Joliffe, L. A. Rosenblum and J. Sawhill: the effects of pyridoxine (vitamin B_6) on resistant adolescent acne, Jour. Investigative Derm., **5,** 143, 1942) the benefit they obtained in the treatment of acne vulgaris by administering B_6 in large doses over a long period. In their first series of 10 cases, 3 were cured, one in 5 months, one in 10 and one in 11 months. All the others improved; but in 4 whose eruption did not recur when the vitamin was discontinued they suspected that the improvement was not due to its influence.

Their second series consisted of 40 students, 11 of whom became free of the eruption while on treatment with pyridoxine. One was clear after only 1 month of treatment, 1 after 3 months and the others after an unstated period of treatment with B_6 in doses ranging from 50 to 250 mg. per day. Of this group 19 improved, 6 were not benefiitted. Of 35 controls treated with a placebo tablet resembling in appearance the one containing the pyridoxine, 7 improved but none were entirely freed from the eruption.

In an effort to duplicate their results, I have treated 41 cases of acne vulgaris, 18 in young individuals normal in health except for the acne, 23 in patients with pulmonary tuberculosis, inmates of a sanitarium. Eleven cases have been excluded because they quit the treatment before the third month, which seemed to me a reasonable minimum. Three others are omitted because of complications which made it impossible to judge the effect of the medication. All patients received local treatment, a sulfur lotion or cream for the area involved and in many cases a sulfur or chloral hydrate scalp stimulant.

Nineteen cases who received 50 mg. of vitamin B_6 daily for from 3 to 8 months failed to show improvement that could be ascribed to the vitamin.

In a few cases the dosage was increased. A man 30 years old was given 50 mg. daily for 8 months, then 100 mg. a day for 2 months without definite benefit.

A man of 32 was given 50 mg. per day for 9 months, then 200 mg. a day for another month without benefit.

A boy of 16 was given 50 mg. daily for 6 months, 150 mg. a day for another month, then 225 mg. daily for 2 months more without improvement.